WHAT IS CLAIMED IS:

1. An image forming apparatus that includes
an application for performing processes on image
formation and an control service for performing system
side processes according to a function call from the
application, the image forming apparatus comprising:

a wrapping part for converting a function
called by the application, and performing a function
call to the control service by using the converted
function.

2. The image forming apparatus as claimed in
claim 1, wherein the wrapping part converts the
function if there is a version difference between the
function used by the application for the control
service and a corresponding function in the control
service.

3. The image forming apparatus as claimed in claim 2, wherein the wrapping part determines whether there is the version difference by referring to

5 information indicating that a version of the corresponding function in the control service has been changed.

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4. The image forming apparatus as claimed in claim 1, wherein the wrapping part converts the function by adding at least a dummy function or at

15 least an argument if the number of functions or the number of arguments is different between the function used in the application for the control service and the corresponding function in the control service.

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5. An image forming apparatus that includes an application for performing processes on image

25 formation and an control service for performing system

side processes according to a function call from the
application, the image forming apparatus comprising:

a wrapping part for selecting messages to be
sent to the application from among messages sent from
5   the control service.

10   6. The image forming apparatus as claimed in
claim 5, wherein the wrapping part selects the massages
by referring to information indicating predetermined
messages that should not be sent to the application.

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7. The image forming apparatus as claimed in
claim 1, the image forming apparatus further comprising
20   a virtual application service that operates as a client
process for the control service and operates as a
server process for the application,

wherein the wrapping part is included in the
virtual application service.

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8. The image forming apparatus as claimed in

5 claim 7, the image forming apparatus comprising:

a version check part for determining whether

a version of a set of functions used by the application

for the virtual application service is within a

predetermined range that the virtual application

10 service can support.

15   9. The image forming apparatus as claimed in

claim 8, wherein the version check part obtains the

version of the set of the functions from the

application, and determines whether the version is

within the predetermined range by referring to

20 information including the predetermined range.

25   10. The image forming apparatus as claimed in

claim 7, the image forming apparatus comprising:

a version check part for determining,
function by function, whether a version of a function
used by the application for the virtual application
5   service is within a predetermined range that the
virtual application service can support.

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11. The image forming apparatus as claimed in
claim 10, wherein the version check part obtains the
version of the function from the application, and
determines whether the version is within the
15   predetermined range by referring to information
including the predetermined range.

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12. A method performed by an image forming
apparatus that includes an application for performing
processes on image formation and an control service for
performing system side processes according to a
25   function call from the application, the method

comprising:

a wrapping step of converting a function called by the application, and performing a function call to the control service by using the converted function.

13. The method as claimed in claim 12, wherein the image forming apparatus converts the function if there is a version difference between the function used by the application for the control service and a corresponding function in the control service.

14. The method as claimed in claim 13, wherein the image forming apparatus determines whether there is the version difference by referring to information indicating that a version of the corresponding function in the control service has been changed.

5   15. The method as claimed in claim 12,

wherein the image forming apparatus converts the

function by adding at least a dummy function or at

least an argument if the number of functions or the

number of arguments is different between the function

10   used in the application for the control service and the

corresponding function in the control service.

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          16. A method performed by an image forming

apparatus that includes an application for performing

processes on image formation and an control service for

performing system side processes according to a

20   function call from the application, the method

comprising:

          a wrapping step of selecting messages to be

sent to the application from among messages sent from

the control service.

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17. The method as claimed in claim 16,

5   wherein the image forming apparatus selects the

massages by referring to information indicating

predetermined messages that should not be sent to the

application.

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18. The method as claimed in claim 12, the

image forming apparatus further comprising a virtual

15   application service that operates as a client process

for the control service and operates as a server

process for the application,

wherein the wrapping step is performed by the

virtual application service.

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19. The method as claimed in claim 18, the

25   method further comprising:

a version check step of determining whether a
version of a set of functions used by the application
for the virtual application service is within a
predetermined range that the virtual application
5   service can support.

10   20. The method as claimed in claim 19,
wherein the virtual application service obtains the
version of the set of the functions from the
application, and determines whether the version is
within the predetermined range by referring to
15   information including the predetermined range.

20   21. The method as claimed in claim 18, the
method further comprising:
          a version check step for determining,
function by function, whether a version of a function
used by the application for the virtual application
25   service is within a predetermined range that the

virtual application service can support.

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      22. The method as claimed in claim 21, wherein the virtual application service obtains the version of the function from the application, and determines whether the version is within the

10   predetermined range by referring to information including the predetermined range.

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      23. A computer program for causing an image forming apparatus to execute wrapping processes, wherein the image forming apparatus includes an application for performing processes on image formation

20   and an control service for performing system side processes according to a function call from the application, the computer program comprising:

      wrapping program code means for converting a function called by the application, and performing a

25   function call to the control service by using the

converted function.

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24. The computer program as claimed in claim 23, wherein the wrapping program code means converts the function if there is a version difference between the function used by the application for the control

10 service and a corresponding function in the control service.

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25. The computer program as claimed in claim 24, wherein the wrapping program code means determines whether there is the version difference by referring to information indicating that a version of the

20 corresponding function in the control service has been changed.

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26. The computer program as claimed in claim 23, wherein the wrapping program code means converts the function by adding at least a dummy function or at least an argument if the number of functions or the

5 number of arguments is different between the function used in the application for the control service and the corresponding function in the control service.

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27. A computer program for causing an image forming apparatus to execute wrapping processes, wherein the image forming apparatus includes an

15 application for performing processes on image formation and an control service for performing system side processes according to a function call from the application, the computer program comprising:

wrapping program code means for selecting

20 messages to be sent to the application from among messages sent from the control service.

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28. The computer program as claimed in claim 27, wherein the wrapping program code means selects the massages by referring to information indicating predetermined messages that should not be sent to the

5   application.

10   29. The computer program as claimed in claim 23, wherein the computer program is included in a virtual application service that operates as a client process for the control service and operates as a server process for the application.

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30. The computer program as claimed in claim

20 29, the computer program further comprising:
    version check program code means for determining whether a version of a set of functions used by the application for the virtual application service is within a predetermined range that the

25 virtual application service can support.

5   31. The computer program as claimed in claim

30, wherein the version check program code means

obtains the version of the set of the functions from

the application, and determines whether the version is

within the predetermined range by referring to

10   information including the predetermined range.

15   32. The computer program as claimed in claim

29, the computer program further comprising:

version check program code means for

determining, function by function, whether a version of

a function used by the application for the virtual

20   application service is within a predetermined range

that the virtual application service can support.

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33. The computer program as claimed in claim

32, wherein the version check program code means

obtains the version of the function from the

application, and determines whether the version is

5   within the predetermined range by referring to

information including the predetermined range.

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34. A computer readable medium storing

program code for causing an image forming apparatus to

execute wrapping processes, wherein the image forming

apparatus includes an application for performing

15   processes on image formation and an control service for

performing system side processes according to a

function call from the application, the computer

readable medium comprising:

wrapping program code means for converting a

20   function called by the application, and performing a

function call to the control service by using the

converted function.

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